Claims

1. Volumetric screw compressor, comprising:

- a casing in which it is possible to identify a suction chamber and a delivery chamber, between which a pair of screw rotors is included;
- a pan containing oil;
- an adjustment unit suited to adjust the delivery of said compressor, comprising:
- a slide valve externally cooperating with said rotors;
- a fluid-operated actuator constituted by a cylinder in which it is possible to identify an active chamber with a sliding piston connected to said slide valve through a rod;
- a plurality of flow paths made in said cylinder in correspondence with said active chamber;
- at least one oil delivery duct connected to said pan;
- a plurality of oil drain ducts connecting said flow paths of said active chamber to said suction chamber;
- on-off solenoid valves inserted in said drain ducts;
- at least one control unit for said solenoid valves,

wherein said adjustment unit also comprises a flow switching unit that connects said active chamber of said fluid-operated actuator with said pan and with said suction chamber and is constituted by a flow switch removably associated with a switching solenoid valve electrically connected to said control unit, said switching solenoid valve being suited to be associated, alternatively, with flow switches, with separate fluid ducts depending on the open or closed position of said solenoid valves and on the position of said slide valve with respect to said rotors, to obtain separate deliveries of compressed fluid.

2. Compressor according to claim 1, wherein it comprises:

- a first on-off solenoid valve inserted into a first drain duct that connects a first flow path of said active chamber to said suction chamber;
- a second on-off solenoid valve inserted into a second drain duct that connects a second flow path of said active chamber to said suction chamber,

said flow switching unit comprising said switching solenoid valve, associated with a first flow switch in which the following can be identified:

- a first flow duct that connects said delivery duct to said first drain duct in an intermediate position between said first on-off solenoid valve and said cylinder;
- a second flow duct arranged in series with respect to said switching solenoid valve and inserted into a third drain duct that connects a third flow path of said active chamber to said suction chamber,

in order to obtain deliveries of compressed fluid that vary discretely.

3. Compressor according to claim 1, wherein it comprises:

- a first on-off solenoid valve inserted into a first drain duct that connects a first flow path of said active chamber to said suction chamber;
- a second on-off solenoid valve inserted into a second drain duct that connects a second flow path of said active chamber to said suction chamber,

said flow switch comprising said switching solenoid valve associated with a second flow switch in which the following can be identified:

- a pair of blind paths that intercept a third drain duct that connects a third flow path of said active chamber to said suction chamber;
- a flow duct arranged in series with respect to said switching solenoid valve to connect said delivery duct to said first drain duct in an

intermediate position between said first on-off solenoid valve and said cylinder,

in order to obtain deliveries of compressed fluid that vary continuously.

4. Compressor according to claim 2, wherein said solenoid valves are arranged according to a first configuration in which:

- said first on-off solenoid valve is closed;
- said second on-off solenoid valve is closed;
- said switching solenoid valve is closed,

said first configuration being suited to obtain 100% of the delivery of compressed fluid.

5. Compressor according to claim 2, wherein said solenoid valves are arranged according to a second configuration in which:

- said first on-off solenoid valve is closed;
- said second on-off solenoid valve is closed;
- said switching solenoid valve is open,

said second configuration being suited to obtain 75% of the delivery of compressed fluid.

6. Compressor according to claim 2, wherein said solenoid valves are arranged according to a third configuration in which:

- said first on-off solenoid valve is closed;
- said second on-off solenoid valve is open;
- said switching solenoid valve is closed,

said third configuration being suited to obtain 50% of the delivery of compressed fluid.

7. Compressor according to claim 2, wherein said solenoid valves are arranged according to a fourth configuration in which:

- said first on-off solenoid valve is open;
- said second on-off solenoid valve is closed;
- said switching solenoid valve is closed,

said fourth configuration being suited to obtain 25% of the delivery of compressed fluid.

8. Compressor according to claim 3, wherein said solenoid valves are arranged according to a fifth configuration in which:

- said first on-off solenoid valve is closed;
- said second on-off solenoid valve is closed;
- said switching solenoid valve is open,

said fifth configuration being suited to obtain 100% of the delivery of compressed fluid.

9. Compressor according to claim 8, wherein said solenoid valves are arranged according to a sixth configuration in which:

- said first on-off solenoid valve is closed;
- said second on-off solenoid valve is opened for a variable lapse of time and then closed again;
- said switching solenoid valve is closed,

said sixth configuration being suited to obtain a value of the delivery of compressed fluid included between 100% and 50%, depending on the opening time of said second solenoid valve.

10. Compressor according to claim 8, wherein said solenoid valves are arranged according to a seventh configuration in which:

- said first on-off solenoid valve is open;
- said second on-off solenoid valve is closed;
- said switching solenoid valve is opened for a variable lapse of time and then closed again;

said seventh configuration being suited to obtain a value of the delivery of compressed fluid included between 100% and 25%, depending on the opening time of said switching solenoid valve.

11. Compressor according to any of the claims 2 or 3, wherein said first, said second and said third flow path of said active chamber are positioned at different distances with respect to the bottom of said cylinder.

12. Compressor according to claim 11, wherein said first flow path is made in the bottom of said cylinder and said second and third flow paths are made in the liner of said cylinder.

13. Compressor according to claim 12, wherein said second flow path is made in an intermediate position between said bottom and said third flow path.

14. Compressor according to claim 12, wherein said second and said third flow paths are aligned.

15. Compressor according to claim 1, wherein said control unit is electrically connected to each one of said solenoid valves and comprises electric/electronic means for opening/closing said solenoid valves.

16. Compressor according to claim 2 or 3, wherein each one of said flow switches is constituted by shaped metal plates, each of said plates being provided with holes for the passage of fastening screws to fix them to said switching solenoid valve and to said casing.

17. Compressor according to claim 16, wherein said shaped metal plates comprise a first plate provided with a first and a second flow duct.

18. Compressor according to claim 16, wherein said shaped metal plates comprise a second plate provided with a flow duct and with a pair of blind paths.